Attn:
State Building Code Review Board (SBCRB)

RE:
Steven Rancourt's Public comments on the 2020 NEC Proposed Amendments.

Hello name is Steven Rancourt; I have been a licensed Journeyman and Master Electrician in the State of NH for over 35 years. I have been an electrical contractor for 34 of those years. I also own and operate B & J Custom Alarms, a security company; I am a partner in JNG Builders, which specializes in building custom homes.

I have participated in the Exam Development Committee for the state of NH for the last 3 code cycles, and I have been actively involved for over 15 years with the Electrical Contractor's Business Association (ECBA), as either president or executive director.

It is my hope to provide some insight for why these amendments have been brought forward and the process that they went through

I am sure you are aware that the SBCRB created a 3-person sub-committee to review the 2020 code changes. This committee consisted of a representative from, the Board of Engineers, the NH Electrical Contractors Business Association and the Board of Electricians, (formerly under the Bureau of Electrical safety). Mr. Grant, who represented the Board of Electricians, is also the electrical inspector for the City of Rochester, and an Educator in the State of NH for many years.

For the most part, the public attendees consisted of the most recently retired Chief Electrical Inspector and the Current Chief Electrical inspector for the State of NH, Myself, a representative from NEMA and a few of the Electrical manufacturers. The committee met as often as possible (due to the pandemic restrictions) for over 18 months, and carefully considered and discussed (whether for or against) all of the amendments that have been brought forward. Once a final draft was prepared it was presented to the Board of Electricians, (by their representative) and received their approval as well. I believe they even provided an official letter stating that, which you should have.

Recently the legislature changed the process and requirements for the SBCRB to adopt amendments as you can see below.

155-A: 10 (IV) State Building Code Review Board. –

IV. The board shall meet to review and assess the application of the state building code and shall recommend legislation, as the board deems necessary, to amend the requirements of the state building code in order to provide consistency with the application of other laws, rules, or regulations, to avoid undue economic impacts on the public by considering the cost of such amendments, and to promote public safety and best practices.
(a) The board may recommend adoption of a newer version of a code that has been published for at least 2 years, and **shall provide** a summary of all significant changes, cost estimates of these changes, and documentation of the need for the change in the recommended legislation.
(b) Amendments to the codes shall be reviewed and approved by the board, then submitted annually to the legislature for ratification by the adoption of appropriate legislation before they become effective.

The National Electrical Code (NEC), 90.1 (A) refers to purpose of their code,

90.1 (A) PRACTICAL SAFEGARDING.
The purpose of this code is the **practical** safeguarding of person and property from **hazards** arising **from the use** of electricity. This code is not intended as a design specification or an **instruction manual for untrained persons.**

But while the NFPA, through the NEC's [90.1 (A)] does not mention anything about cost incurred from these changes, Here in the State of NH, our legislature has mandated that the SBCRB not only provide cost estimates of these changes, but also to provide documentation for the need for any changes. This becomes a very important factor when putting forth any new Code changes, and not just for the NEC.

As you can see from article 90.1 (A) above it is based on

- Hazards arising from the use of electricity, and
- Is not meant for untrained persons.

I am sure we can all agree that any loss of life is tragic. While some of these code changes may have prevented some of the tragic accidents that occurred, you have to ask yourself with all of the above in mind, is this a recurring problem [and if so, The SBCRB should have the person or entity who proposed the code change to the NEC, provide the documentation to show that] or was it purely a tragic, tragic accident, which included a loss of life?

And with that in mind, what was the initial factors or other circumstances that may have caused /prevented these tragedies? The board should also consider what other possible simple solutions might there be which might be more cost effective and efficient.

I am asking the board to approve all of the amendments to the 2020 NEC submitted to them, so that they can go before the legislature. I am not going to provide written testimony for each and every amendment but will address the common issues that do not meet the criteria required by our State Laws.

210.8(A) Dwelling units GFCI protection on all 125 volt thru 250-volt receptacles

This is an example of a tragedy that was caused by not following our existing laws, and allowing the range cord to be installed by an unqualified/ unlicensed person from a large box store, (who to my understanding pinched the cord). Along with having a manufacturer's recall for issues with the bond strap going between the neutral and ground. While I am on the side of safety, the NEC should not now mandate GFCI protection in these area based on a set of very specific and unfortunate circumstances

Had the 50 amp, 240 volt cord been wired by a licensed electrician, more than likely this would have never happened, and even if a mistake was made it would have tripped the regular breaker from the first time it was turned on and would have been fixed before anyone got hurt.

The cost associated with this change is far more than portrayed. Some larger companies may be able to purchase GFCI breakers with a package for a large job at a better price, but for the most part the cost for individual dwellings is much higher.

See Addendum A, for details on cost of these breakers, and keep in mind that this does not include a contractor marking up the material cost or any trouble shooting that may be needed. If you had a city that had, lets say 2000-2500 units over a course of the year, that required both a GFCI breaker on the stove and dryer, you would be looking at a minimum of $200 per unit (with no mark up) which would cost approximately $500,000, just for **one** city in the state.

It is not just an $80 breaker !!!!

Even the manufactures have put out a white paper with regards to the nuisance tripping in kitchen circuits, and that the NFPA did not give them sufficient notice or time to try and comply with this new code for appliances to work with GFCI protection. **See Addendum B**

Continued
210.8(A) Dwelling units GFCI protection on all 125 volt thru 250-volt receptacles

Cause of this accident

- Allowing and unqualified, untrained, unlicensed person to do electrical work

- A defect from the manufacturer requiring them to put out a recall

AND

This was not a **hazard** arising **from the use** of electricity, per 90.1(A). The plumber was installing a Dishwasher, not using the range.

Could you Please have the person or entity that submitted this to the NFPA, or opposes this amendment, provide the data showing that this is a recurring problem in the State of NH, and whether or not this would have been an issue if it was installed and wired by a Qualified, Trained, Licensed Electrician?

Possible solutions.

Have all electrical work done by a licensed electrician.
Additional cost $0.00-$20.00
(On new dwellings most electricians will install this at no additional Cost while doing the finish electrical)

Have the manufacturers Install a 4 wire cord on all ranges and dryers.
Which should insure that all cords are install properly under a quality controlled situation to meet UL standards, and for older existing installations the customer can purchase a 3-wire to 4-wire adaptor.
See Addendum C
Additional cost should be minimal if any. Because the manufacturer will be able purchase these cords in bulk and install them for what you might pay for just the cord at a box store.

210.8(B) Other than dwelling units

There can be a lot more issues once you include all 250-volt devices up to 50 amps. As you can see from the previous article manufactures do not design them to function on GFCI's and in restaurants this is a significant issue possibly causing losses in food storage and process shutdowns due to nuisance tripping. You would be surprised at how many restaurants that get fed up and started running extension cords to get around this. The cost can get extremely high when the manufacturers don't make the breakers to fit in certain panels

> Could you Please have the person or entity that submitted this to the NFPA, provide the data showing that this is a recurring problem in the State of NH.

210.8(E) Equipment requiring servicing.

There is no need for the expansion or GFCI protection in these locations and if so

> Please have the person or entity that submitted this to the NFPA, provide the data showing that this is a recurring problem in the State of NH.

210.8(F) Outdoor Outlets.

GFCI protection for Mini Splits

Again While I am on the side of safety, the NEC should not now mandate GFCI protection based on a tragic accident for an isolated issue.

Cause

- Allowing and unqualified, untrained, unlicensed person to do electrical work

AND

This was not a **hazard** arising **from the use** of electricity, per 90.1(A).

He was cutting through a yard and jumping a fence while trespassing, and not using or working on the split system.

Please have the person or entity that submitted this to the NFPA, provide the data showing that this is a recurring problem in the State of NH.

Many of the only 12 states that have adopted the 2020 NEC have already made amendments to this article, again GFCI protection is not needed but they also did not give the manufacturers time to try and comply with this new code.

See Addendum D

This provides multiple negative comments but most importantly is the one highlighted comment from Mark Hilbert. Mark is a former State of NH Chief Electrical Inspector, and a member on a Code Making Panel For the NFPA, and an educator in many states. He is well know in the electrical industry.

210.12 (c) Guest rooms, guest suites, and patient sleeping room in nursing homes.

Our state law under RSA 155-A: 2 (XI). prohibits the expansion of AFCI's This amendment just makes the code coincide with the law.

This is another manufacturer issue that should be addressed. The manufacturers do not have a specific standard to make AFCI's. So every manufacturer has proprietary technology for their own AFCI devices. Until they change this, it makes it nearly impossible for the manufacturers of consumer goods to make their products work with all the different AFCI technology out there. Until the manufacturers of AFCI devices correct this problem there is no need to continuing expanding their use, continually putting the consumer and electrician in the middle of this problem.

Could you Please have the person or entity that submitted this to the NFPA, provide the data showing that those areas have a recurring problem in the State of NH.

230.67 Surge Protection.

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that there are recurring problems in the State of NH, that require us to install this.

Not to mention the warrantees for most of these devices are very deceiving. Some give the customer the impression that they will cover between $10,000-$75,000 worth of damage. But when you read the fine print they only cover cost incurred "up to" the deductable from your homeowners insurance, and you **have** to file a claim with you homeowners insurance first. They do not cover any labor as well.

This should be a homeowner's option not be mandated by the NEC. There is very little proof that these lesser expensive SP devices actually provide the protection you think they do.

A report from NFPA with regards to home structures fires shows that in a 4-year period, surge protectors caused 470 fires, 24 civilian injuries and 4 deaths. Isn't this the opposite of what the code is trying to accomplish?

See Addendum E (also see addendums F,G,H & I for warranty info)

314.27(C) Boxes at Ceiling-Suspended Paddle Fan Outlets

- This is another code article that is not needed and would not be and is not an issue if you didn't Allow and unqualified, untrained, unlicensed person to do electrical work. We can not wire everything for "future " needs, if they hired a qualified person to install the fan that person would put the proper UL listed fan box in at that time and where it might be needed, instead of every possible location in the house that might need one "someday".

  If a customer thinks that someday down the road they might finish off their basement, does that mean we should be wiring the unfinished basement now cause they might do something down the road???

Could you Please have the person or entity that submitted this to the NFPA, provide the data showing that this is a recurring problem in the State of NH.

334.10 Uses Permitted

Uses for NM (romex)

This is an amendment that was supported and approved for the 2017 NEC. It is already in place now in the state of NH, with no incidents reported over the last 3-year period. This article has been amended by many states including Massachusetts, which has a lot more high-rise structures than NH, and they have not had any issues that caused them to consider removing their exception to this code article as well.

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that this is causing problems in the State of NH, and confirm whether or not there have been any issues, when this type method of installation was (installed and wired) by a Qualified, Trained, Licensed Electrician?

406.12 Tamper Resistant Receptacles.

Did you know ?????

That the cost of **ONE** duplex receptacle went up 250%, and a GFCI duplex receptacle went up between 60-100%when this first appeared in the 2008 NEC? (and there is still as much of a difference today)

That the ROP (request for proposal) submitted to the NFPA to adopt this code change, was submitted by Pass & Seymour, who at the time did not make residential devices until this code was passed, but is now one of, if not the largest, manufacturer of residential devices in the country?

That according to NEMA only 4% of these incidents involving objects being placed into receptacles, occur in public places? **See Addendum J**

That the study that was submitted by P & S when submitting this ROP to the NFPA back in 2002, was for a 10-year period from 1991-2001? Making the data for the requested expansion of Tamper Proof receptacles in the 2020 NEC, over 20-30 years old as of this year!!!

So I ask again

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that there is a need for this in public places in the State of NH

442.5 General GFCI

GFCI protection and cost go up dramatically when increasing from 20 amps to 60 amps and from single phase to three phase. Not to mention that in many commercial instances they are not even available. This expansion is not needed at this time

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that there is a need for this in public places in the State of NH

440.14 Location

Disconnecting means for Split systems.

This exception simply allows us to apply the same principal to a split system as we do to, lets say a well pump disconnect or a roof top unit. So long as the disconnect is lock able in the open position and shuts off the power to the headed inside, there is no need for an additional disconnect inside at the head, which in most residential situations is not only about the additional cost but also the extreme eye sore.

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that there is a safety hazard by adding this exception or a need to have this additional switch, in the State of NH.

450.9 Ventilation

Labels for a transformer

This new requirement should lay solely with the manufacturer. It is their transformer, they know what type of label will withstand the heat that their transformer will produce, and it is something that can be installed where they deem necessary for proper notification.

The cost will be substantially less because the manufacturer will buy these labels in large quantities as oppose to the electrician buying one or two here or there.

With regards to other labeling covered under the NEC. When Electricians are required to put any labels on, it is usually because that particular product can be used for multiple circumstances/situations and not all of them require the exact same label for every installation. That is not the case for this article. Every transformer should carry a label that the manufacturer deems necessary to protect **THEIR** equipment and it would be needed on every one they produce.

Could you Please have the person or entity that submitted this to the NFPA, or that opposes this amendment, provide the data showing that there is a need to have this done by electricians instead of by the manufacturer in the State of NH.

680.4 Inspection after Installation

This article is extremely dangerous and sets a dangerous precedent. When did the NFPA decide, and who granted them the authority to start putting requirements for inspections in the NEC, especially for the local AHJ?

This is not under the preview of 90.1 (A) nor do they have any authority to require inspections or testing. This is something that should be handled with laws at the State and local levels, and with the local AHJ, and only if they have facilities that may pose a need for recurring inspection. This should not be a blanket authority for every local AHJ.

Thank you for your time, and for placing this in the public comments section of the Hearing for the 2020 NEC amendments.

Regards

Steven R Rancourt